



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,495	11/25/2003	Michael Kenny	54008.8100.US01	6048
45540	7590	05/04/2006		
PERKINS COIE LLP/SEMITOOL PO BOX 1208 SEATTLE, WA 98111-1208			EXAMINER STINSON, FRANKIE L	
			ART UNIT	PAPER NUMBER
			1746	
DATE MAILED: 05/04/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

CM

<b>Office Action Summary</b>	<b>Application No.</b> 10/721,495	<b>Applicant(s)</b> KENNY ET AL.	
	<b>Examiner</b> FRANKIE L. STINSON	<b>Art Unit</b> 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 5-11, 14, 15 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-11, 14, 15 and 22-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>VARIOUS</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1746

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 7, 8, 10, 11, 15, 22, 23, 24 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable Lampert (U. S. Pat. 5,181,985) in view of EPO'177 (European Patent Office 782,177).

Re claims 1 and 22 for example, note that Lampert discloses a method of cleaning a single workpiece comprising;

placing a single workpiece into a process chamber (col. 3, lines 62-63);

closing the chamber (col. 4, lines 4-7, "conventional" spray or etching cleaning chamber are closed off due the to harmful chemicals used);

heating a liquid (col. 2, lines 33-39);

spinning the workpiece (col. 6, line 8);

spraying the spinning workpiece with the heated

liquid, with the heated liquid forming a layer on the workpiece (col. 2, lines 40-51, "water mist is built up"); and

providing ozone gas into the process chamber (col. 2, lines 52-56), with the ozone gas dissolved into the liquid, or injected into the liquid, causing portions of the ozone gas to dissolve into the liquid, and other portions of the ozone gas to be entrained into the liquid, and with the ozone gas chemically reacting with a contaminant on the workpiece (col. 2, lines 50-51) to clean the workpiece that differs from the claim only in the

Art Unit: 1746

recitation of the controlling of the thickness of a liquid layer. EPO'177 disclose the controlling of a liquid layer. It therefore would have been obvious to one having ordinary skill in the art to Lampert, to control the layer of liquid (Lampert employs a gas however, the surface of the substrate is "wet-treated", see abstract). In regard to claim 8, note Lampert, col. 3, line 65-67.

3. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 1 and 22 above, and further in view of either Tanaka et al. (U. S. Pat. No. 5,158,100) or Wen U. S. Pat. No. 6,239,038).

Claim 5 defines over Lampert only in the recitation of the process chamber being heated to indirectly heat the workpiece. Tanaka and Wen are each cited disclosing a workpiece treating system/method employing ozone, where there is provided chamber heating means (see col. 19, lines 32-14 and fig. 14, reference character 264 in Tanaka, and see col. 8, lines 51-55 and fig. 23, reference character 521 in Wen) for indirectly heating the workpiece. It therefore would have been obvious to one having ordinary skill in the art to modify the method of Lampert, to have the chamber heated as taught by either Tanaka or Wen, for the purpose of enhancing the cleaning process. Re claim 6, note that Wen discloses the down facing workpiece (fig. 21).

4. Claims 9 is are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 1 and 22 above, and further in view of either Kashiwase et al. (U. S. Pat. No. 5,378,317) or DeGendt et al. (U. S. Pat. No. 6,551,409).

Art Unit: 1746

Claim 9 defines over the applied prior art only in the recitation of the injection of ozone into the liquid and delivering the same into the chamber. Kashiwase and DeGendt are each cited disclosing in a method for cleaning a workpiece, where there is ozone combined with a liquid and the same is provided to the chamber. It therefore would have been obvious to one having ordinary skill in the art to modify the method of Lampert, to include a ozone/liquid provided to the chamber as taught by either Kashiwase or DeGendt, since Kashiwase and DeGendt, disclose the use of either an ozone gas or an ozonated liquid.

5. Claims 14 is are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claims 1 and 22 above, and further in view of Rose et al. (U. S. Pat. No. 5,967,156).

Claim 14 defines over Lampert only in the recitation of the liquid layer being formed by a pulsed spray. Rose discloses a workpiece method employing ozone, where the liquid is pulsed (col. 3, line 49). It therefore would have been obvious to one having ordinary skill in the art to modify the method of Lampert, to have the liquid pulsed as taught by Rose, for the purpose of enhancing the cleaning process.

6. Claims 26 is are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claims 1 and 22 above, and further in view of either Koizumi et al. (U. S. Pat. 5,503,708) or Japan'732 (Japan 63-110732).

Re claim 26, Lampert is cited disclosing as applied in paragraph 2 above, essentially disclosing all of the claimed subject matter with the exception of the application of steam. Koizumi and Japan'732 are each cited disclosing a workpiece treating method

Art Unit: 1746

employing ozone, where steam is also directed to the workpiece. It therefore would have been obvious to one having ordinary skill in the art to modify the process of Lampert, to include steam as taught by either Koizumi or Japan'732, for the purpose of enhancing the cleaning process.

7. Applicant's arguments filed March 20, 2006 have been fully considered but they are not persuasive. In regard to the remarks that Lampert only employs a gas and therefore there is no controlling of the thickness of a liquid layer, please note the Lampert also disclose the surface of the substrate is "wet-processed" and it is understood that a layer of liquid is inherent deposited on the substrate

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1746


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANKIE L. STINSON whose telephone number is (571) 272-1308. The examiner can normally be reached on M-F from 5:30 am to 2:00 pm and some Saturdays from approximately 5:30 am to 11:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1700. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

fls

  
FRANKIE L. STINSON  
Primary Examiner  
GROUP ART UNIT 1746